DOCUMENT RESUME

ED 193 249 TM 800 563

AUTHOR Gagne, Robert M.
TITLE Communicating Research Results to Practitioners.
PUB DATE Apr 80
NOTE 11p.; Paper presented at the Annual Meeting of the American Educational Research Association (64th, Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Basic Skills; *Educational Research; Elementary Education; *Elementary Schools; *Instructional Improvement; Problem Solving; Research and Instruction Units; *Research Utilization
IDENTIFIERS *Research and Development

ABSTRACT

A report is presented of a year-long period of furnishing information to elementary schools on research findings and products related to the improvement of basic skills. Particular empirical findings are not analyzed; rather, an integrated impression of the success or failure of research utilization by schools is conveyed. The outcomes of research are discussed in three forms: conclusion-oriented (primary implications are for continuation of research); decision-oriented (the solving of a practical problem through an investigation); and the developed product (designed for immediate application and use). The properties which make the process work are local school problem-solving, training in problem-solving methodology, and interpretation of research findings. It is concluded that the best way to "get research into the schools" is to put it there, and the following are described as characteristics of school-based research and development: (1) it is decision-oriented; (2) it does not require large specialized resources, (3) it seldom employs a true experimental design; (4) it should aim towards constructing teacher procedures, not products; (5) novel ideas would have to be accepted; and (6) dissemination would become utilization. (Author/GK)

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Communicating Research Results to Practitioners

Robert M. Gagné
Florida State University

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ABSTRACT

A report of a year-long period of experience in furnishing information to elementary schools on research findings and products related to improvement of basic skills. The function of supplying this information was performed as a part of the Florida R & D Utilization project. Procedures of operation of the project and the dissemination of R & D outcomes are described, along with a small amount of evaluative data. Implications are drawn concerning factors that appear to influence the effectiveness of programs of dissemination and utilization of R & D outcomes by schools.

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Communicating Research Results to Practitioners

Robert M. Gagné

Florida State University

(Contribution to Symposium on "Bridging the Gap between Research and Practice", AERA Annual Meeting, Boston, April 11, 1980)

It is my impression that despite various kinds of attempts to solve the problem, a dependable method for "getting research into the schools" has not yet been found. Whatever may be the attitudes of practitioners toward this state of affairs, those engaged in educational research continue to find this circumstance disturbing. Of course, probably more than one method may have to be employed in seeking to achieve improved utilization of research outcomes by schools.

In the recent past, I attempted to carry out one function of a process of research dessemination aimed at schools, as part of a larger project known as the Florida R & D Utilization Project. As a whole, the project undertook to train three members of the staffs of each of 27 elementary schools. These trained personnel were then to engage the local faculty in problem definition and problem solving in the area of instruction for basic skills. The school faculty participated in activities intended to define their problem, describe it, and seek help by the application of results and products of educational research and development. My function was to receive the description of the problem, clarify it if necessary, and inform the school staff of available outcomes and products which could be viewed as the bases for alternative solutions. Following receipt of this information, the school staffs, with technical assistance from district or university personnel, went forward with their problem solving to choose and adopt a solution having the purpose of improving pupil achievement in such areas as reading and arithmetic.

A portion of what I intend to report is based upon observations of this process of furnishing R & D information to schools - observations made while I was definitely a part of the process. In addition, I can include a small amount of data which is derived from project records, and from evaluation studies. My purpose, however, is not to present or analyze particular empirical findings, since I am simply trying to convey an integrated impression of how something works, and why it does or doesn't work. The "something" is of course, research utilization by schools.

What Kind of Information?

The outcomes of research take various forms, and it is possible to transmit them to school personnel in at least an equal variety of forms. Many research outcomes are "conclusion-oriented" (Cronbach & Suppes, 1969), which means their primary implications are for the continuation of research. A second category of outcome is "decision-oriented." This means that an investigation has been able to solve a particular practical problem. The generalizable applicability of findings in the latter kind of study is limited, usually to closely similar situations. For example, a finding that a program of book prizes for reading achievement has worked in a middle-class suburban school cannot be indiscriminately considered as a solution to the reading problem of a school in a rural southern community. A third variety of research outcome, often accorded much prominence, is a developed product, such as a reading program, a diagnostic mathematics test, or a word spelling kit. Information about products of this kind was emphasized by the project from which my most recent experience derives, in response to guidelines provided by the project's sponsor, the National Institute of Education.

Regardless of which form the research outcomes take, the directly transmitted form of the information is successfully utilized only seldom, perhaps

rarely. Systems which report research titles and abstracts of results undoubtedly perform an important service, but the information they provide cannot be utilized in raw form for local school problem solving. For example, an investigator of human memory may perceive some possible educational implications in a finding that the names of objects in pictures are remembered better by children if the objects are put into major categories, like "clothing", "tools", and so forth. In other words, categorizing helps paired-associate learning. But the applicability of such a finding to instruction in the elementary school must be interpreted with great care. What similar activities of the elementary grades could profit from the application of such a finding? No doubt there are some, but their characteristics are not immediately obvious, and their identification requires some considerable knowledge of theories about human cognition.

The outcomes of decision-oriented research must also be interpreted for individual school application. Here the problem is one of deciding to what extent generalization is possible from results obtained in specific circumstances to answer a specific problem. A reading program which improves achievement in inner-city youngsters may be quite inappropriate for rural children in isolated locations, though they are equally disadvantaged, but in somewhat different ways. Again in this instance, informed judgment based upon a wide-ranging knowledge of research methods and findings must be brought to bear before new application to a different school situation is even contemplated.

The third type of outcome, the developed product, is presumably designed for immediate application and use. If the product is an arithmetic program, for example, it may come already packaged with student workbooks, practice exercises, tests, and teachers' manuals. In some instances, rare enough to be striking exceptions, the product may even be accompanied by some type of evidence of its effectiveness with defined samples of students. Of course, such evidence needs to be interpreted for its generalizability but it is somewhat reassuring to know at the outset that a product has been

effective with some students in the hands of some teachers. Beyond all this, however, is the fact that a product is almost never ready for immediate use in any particular school or classroom. Typically, the product implies some ways of delivering instruction, of classroom and materials management, of student grouping, of assessment of students' progress, and the like; arrangements which need to be put into effect in order to assure the proper employment of the product. The schools in the Florida R & D Utilization project that received information about alternative products proceeded to make a choice and then to follow this choice with an intensive period of "adapting the product to local school conditions". This period requires considerable effort on the part of teachers of the school, and also on the part of others from district and university agencies who are providing technical assistance. It is my contention that this activity may legitimately be viewed as the "development" aspect of R & D, carried out by the school itself. What is being developed, of course, is not a product, but rather some techniques and procedures for product use. These are the kinds of development efforts whose outcomes are immediately usable by the school.

Whatever kind of information about R & D outcomes is furnished to schools, then, it appears that some general conclusions can be stated about its influence on school practices:

(1) Raw information about research findings and products is seldom useful, and may be misleading.

(2) To obtain useful R & D outcomes for schools, informed and critical interpretation must be done, based upon broad knowledge of educational reserach and its findings.

(3) When R & D outcomes, including products, are transmitted to schools, there is need for considerable subsequent activity on the part of school personnel; first, a choice of alternatives must be made, and second, effort must be devoted to "adaptation", which is actually procedure development.

What Properties Make the Process Work?

The project in which I played a small part actually has as one of its outcomes the verification of use of R & D outcomes in a group of 27 elementary schools. According to results of an evaluation study (Florida Linkage System, 1979), 82% of the school personnel involved attached high importance to the availability of information about the effectiveness of R & D outcomes and products. Seventy per cent of the choices of solutions came from among the alternatives supplied to the schools, and there were some secondary effects which, if counted, would raise that figure somewhat.

There is evidence, then, that on the whole, carefully interpreted information, when supplied to the schools participating in this project, was actually utilized. Why did that happen? What characterized the process of problem solving in these schools that led to this kind of result? To answer this question, I shall need to speculate on the importance of some of the factors which were present, since I cannot compare them directly with a group of contrasting schools, as would be the case in a true experiment.

1. First mention as a factor of importance is surely deserved by the fact of local school problem solving. Personnel of the local school were trained in some of the techniques of effective group problem solving, and were able to undertake this activity in such a way as to involve large segments, or the whole, of the teaching staff. Solutions were in no way imposed from "outside" or "above". Instead, an intense effort was undertaken by the school itself, first to formulate a definition of a problem to be solved, second, to examine alternatives and make a choice among them, and third, to develop the techniques and procedures needed for instituting change.

2. Second, considerable attention and effort was given to training teachers in the methods of problem solving, particularly as they concern methods of getting groups of people to focus on problems and to arrive at a consensus in decisions.

3. The outcomes of R & D, whether findings or products, were given careful interpretations, or "translations", before being transmitted to schools. The conclusions of research studies, by themselves, were not useful to school personnel. The manner in which these outcomes applied to the particular situation of the school needed to be knowledgeably interpreted in the light of how they were derived. This was true of products, as well as of results which were simply statements of conclusions.

Implications for R & D Utilization

How could such qualities as those I have just described be built into a system of educational R & D that would assure the utilization of research and development outcomes?

It seems to me that the best way to bring about acceptance and cordial welcoming of research outcomes by school personnel is to involve them in the research process. In other words, I suggest that the following proposition is worth a good trial: The way to "get research into the schools" is to put it there. However, that idea needs some additional explanation and definition.

For one thing, the efforts undertaken by the schools I have mentioned, referred to as "local problem-solving" could perhaps as well be called "research and development". Many of the features of the kind of studies undertaken by educational researchers were involved. There was, first, an up-to-date review of the research literature. While school personnel didn't do this, they definitely depended upon it. Second, there was a definition of the problem - a familiar part of any research study. Third, there was a plan of research action, which included the designation of variables to

be manipulated and, in effect, hypotheses to be tested. Fourth, there was an identification of outcome variables, of what measures or indicators would be observed for evaluative purposes. And fifth, as I have stated, there was an intensive period devoted to development - the development of techniques and procedures which were expected to make a product work, but not the product itself.

I believe it would not stretch the words "research and development" too far to consider that they might encompass the kinds of efforts undertaken by these schools. This kind of "school-based R & D" has the following characteristics:

1. Typically, it is applied research, undertaken to answer specific questions. It is "decision-oriented".

2. Frequently, it is "small" R & D, rather than "big" R & D. It is small not only because its generalizability is limited, but also because it usually does not require large resources of a specialized nature. The "subjects" are school children; the materials are part of a curriculum; the design can be uncomplicated; the collation and analysis of data is not an awesome task.

3. It seldom employs a true experimental design. In fact, the most typical design is a comparison of last year's and this year's performance of similar groups of students in terms of a designated criterion. While the threats to validity of conclusions from studies with such a design are well known, they nevertheless can be identified and taken into account in reaching decisions. Other possible designs for "small" research are some of the causal models for correlational data, described by Lohnes (1979).

4. The development part of R & D undertaken by a local school should, with rare exceptions, continue to have the aim of constructing teaching procedures, not products. Products, if they are to be developed, definitely require "big" R & D efforts.

5. If the conception of local school R & D were to be instituted, several novel ideas would have to be accepted:

a. Teacher education would need to include a component which provided for understanding of the research and development process.

b. Boards of education and school district administrations would have to recognize and authorize research and development as an integral part of school activities - something that requires materials, space, and other resources. It would need to be an activity provided for in budgets as are funds for maintenance, athletics, and other expenses.

c. There would need to be an established network to provide professional advice and technical assistance in the whole area of educational research and development. Such aid would go beyond that concerned with the interpretation of research findings. It would need to deal with the design and conduct of "small" research studies, including applied research, the analysis of data, and the planning of development activities. I emphasize the principle that school-based R & D cannot become and remain viable without forming definite links with the larger body of research activities that one now thinks of as being carried out by university researchers and those in other agencies such as regional laboratories and independent research groups. Accordingly, it is the educational researchers in these institutions that would need to develop well-established linkages with local schools.

6. As a final point, it seems to me that the acceptance of the idea of school-based research might well have the effect of invigorating the entire domain of educational R & D. And it would surely turn the problem of what is now called "dissemination" into one which on its face seems to make more sense, namely, "utilization".

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